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09/670,610	09/26/2000	Denny Jaeger	4143	4665

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Harris Zimmerman Esq
1330 Broadway
Suite 710
Oakland, CA 94612

EXAMINER

NGUYEN, HAU H

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 06/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/670,610

Applicant(s)

JAEGER ET AL.

Examiner

Hau H Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on September 26, 2000 has been missing. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance. Drawing for figures 12E and 12F are disclosed in the specification, but not attached.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 65 and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 65 and 66 conflict with each other.

4. Claim 93 recites the limitation " said knob cap" in claim 25. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-2, 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Jaeger et al. (U.S. Patent No. 6,326,956).

Referring to claims 1, 2 and 16, Jaeger et al. (U.S. Patent No. 6,326,956) disclose an input device for touch screen comprising a base member sliding along a linear path. As shown Fig. 7, the control panel 72 is provided with another control device 77, which is of the linear potentiometer or fader type (see column 12, lines 20-25). This fader cap is attached to the base of the touch screen. Since the base of the fader cap only occupies a small portion of the touch screen, plurality of these bases can be arranged closely together.

In regard to claims 17-19, Jaeger et al. (U.S. Patent No. 6,326,956) teach cap 78 travels along a pair of spaced apart parallel rails 81, which are secured to the face of the display screen

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13 by adhesive or other means (see column 12, lines 30-32). These devices can be arranged in crack-and-peel sheet.

7. Claims 1, 20-25, 27-43, 45-46, 53-59, 67, 68 and 72 are rejected under 35 U.S.C. 102(e) as being anticipated by Jaeger et al. (U.S. Patent No. 5,982,355)

Referring to claims 1, 20-24 and 27, Jaeger et al. (U.S. Patent No. 5,982,355) disclose an input device to a touch panel comprising a turnable knob to vary the control signal, having a shaft 133 of metal, plastic or the like which protrudes outward from the transparent cover plate 134 of a flat panel display 136 at a location within the image display area. A knob cap 154 is secured coaxially with the post and adapted for rotation about a common axis as shown in Figs. 22-24. Conductors 141, which acts as a stylus tip, extend along shaft 133 and along the undersurface of cover plate 134 to connect the cells 139a and 139b with a control signal processing circuit 142 which is shown in FIG. 25 and which can be situated within the marginal region of the flat panel display 137 (see column 13, lines 55-65).

In regard to claims 25, 28 and 29, Jaeger et al. (U.S. Patent No. 5,982,355) also teach the device can be manipulated by use of radio frequency or infrared radiation (see column 4, lines 34-36, and column 11, lines 65-68).

As for claims 30-33, Jaeger et al. (U.S. Patent No. 5,982,355) disclose a groove 228 extending along the track 224 for the fader cap 223. Since the knob and joystick are affixed to the touch screen and are controlled in similar manner with the fader cap, this groove can be configured for a knob controller or a joystick.

Referring to claims 34-39, as shown in Figs. 24 and 25, a flat panel display controller 153, responsive to signals from microprocessor 148, causes the flat panel display 137 to display changeable graphics that assist the operator of the control device 132 and which may take different forms depending on the nature of the controlled circuit 153. The graphics may, for example, include a number indicating the current setting of the control device 132. The graphics further include a knob image which is a circular knob outline 155 situated in coaxial relationship with the actual knob 130 and which has an outwardly directed pointer image 155a at one location on the circular knob outline. Referring to FIGS. 24 and 26, the microprocessor programming causes the knob image including pointer 155a to turn in a clockwise direction during periods when the value of the outputted control signal is being increased in the previously described manner and to turn in a counterclockwise direction during periods when the outputted control signal is being decreased (see column 15, lines 45-65). Use of an image display screen as a control panel of the remote control enables instant and automatic changing of the labels and other graphics that identify switch functions and current settings of controls when the unit is switched from one mode of operation to another (see column 3, lines 62-68).

In regard to claim 40, Jaeger et al. (U.S. Patent No. 5,982,355) teach one known form of control device 222 (Fig. 32) for producing a control signal that can be varied by an operator has a knob 223 that can be slid along a linear track 224 to vary the signal which control devices are variously called faders, linear potentiometers or by other names depending on the function and internal construction of the particular device (see column 19, lines 31-36).

Referring to claims 41-43, Jaeger et al. (U.S. Patent No. 5,982,355) teach an operation of a joystick 177 type of circuit control device 178 can be facilitated by providing instantly

changeable graphics 179 in close proximity to the joystick that is manipulated by the operator as shown in Fig. 29. Jaeger et al. also teach the rate of turning of the knob image is matched to the rate of the increase or decrease in the outputted control signal. Thus the knob image provides a visual indication of the current setting of the control device 132 similar in appearance to a conventional control device having a knob which is actually turned by the operator, and a microprocessor is programmed to do this (see column 15, lines 65-68, and column 16, lines 1-4). The controller of the joystick can applied in similar manner.

Referring to claims 45, 46, 53-56, Jaeger et al. (U.S. Patent No. 5,982,355) teach the fader, knob and joystick have their bases on the touch screen; therefore, they can be arranged contiguously in one single touch screen. The signal processing control circuits are basically the same in using the stylus tip to generate or transmit the signals. Jaeger et al. also teach a touch sensitive area at a front face of the panel which may be touched at any of a plurality of different locations therein to initiate selected ones of a plurality of different control signals (see column 3, lines 32-36). Jaeger et al. (U.S. Patent No. 5,982,355) further teach the sensors are affixed to the transparent cover plate 183 near the base end 182 of the joystick and are at different locations around the perimeter of the base of the joystick, the sensors of this example being separated by an angular interval of 90° measured about the axis of the joystick (see column 17, lines 48-52).

In regard to claims 57-59, Jaeger et al. (U.S. Patent No. 5,982,355) teach the joystick 177 is formed of flexible material such as rubber or the like and has a base end 182 which is bonded to the transparent cover plate 183 of the flat panel display 180 with adhesive or by other means as shown in Fig. 29 (see column 17, lines 28-31).

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Referring to claims 67, 68 and 72, as shown in Fig. 30, Jaeger et al. (U.S. Patent No. 5,982,355) teach the tiltable joystick 177a is held at socket member 191 by an annular retainer 192 which is also adhered to cover plate 183. Retainer 192 encircles the socket member and has an annular end wall 193 that encircles the spherical base end 188 of the joystick 177a in contact with the base end. The joystick 177a is biased towards an untilted orientation, at which it is perpendicular to the cover plate 183, by a compression spring 194. Spring 194 is disposed in coaxial relationship with the joystick 177a and extends between retainer end wall 193 and an outwardly directed flange 196 portion of the joystick 177a (see column 18, lines 15-25).

8. Claims 73-82 are rejected under 35 U.S.C. 102(e) as being anticipated by van Ketwich (U.S. Patent No. 6,072,475)

Referring to claims 73-79, van Ketwich teaches an input device to the touch screen in which an object can be detected by capacitive technology having a resilient insulating membrane 1002 the first set of conductive strips 1021-1024 and the second set of the conductive strips 1025-1028 will be in a perpendicular relationship to each other as shown in Fig. 1b. Leads 1031-1034 are connected to the conductive strips 1021-1024, respectively. Leads 1035-1038 are connected to the conductive strips 1025-1028, respectively. As shown in Fig. 8b, a separate decoder and/or driver unit 1551 is used. The connectors of the touch screen 1553 may correspond to the leads 1031-1038 of FIG. 1b when the touch screen has been formed to have an electrical arrangement similar to the electrical arrangement as has been described above in conjunction with FIG. 1b (see column 9, lines 26-35). The U-shape of the touch screen is given such dimensions that a user may slide his finger or a stylus over the active surface area in at least one direction and thereby, due to the tactile feedback from the U-shape, the user can be informed

about the position of the finger or the stylus at the active surface area (see column 4, lines 1-8). Two parallel grooves are first formed at the surface region of the apparatus 1141. The grooves are formed in such a way that at least a part of the "legs" of the U-shaped structure may be placed in the grooves (see column 6, lines 58-62).

As for claims 77-79, van Ketwich also teaches that it is also possible to allow the pivot button 1755 to slide along the U-shaped structure by the influence of a user. Such movement is indicated in Fig. 10a by the arrows symbolized by X' and X". In an alternative embodiment the pivot button 1755 may be provided with small protruding elements (not shown) which physically separate the major part of the surface of the pivot button 1755 faced towards the touch screen 1711 from the surface of the touch screen (see column 10, lines 50-62).

In regard to claims 80-82, van Ketwich also teaches using touch screens of other kind of technologies such as discrete resistive, scanning infrared or digital resistive technologies (see column 5, lines 48-51). Therefore, the same configuration as described above can be used in a resistive touch sensor controller.

9. Claims 84-91 are rejected under 35 U.S.C. 102(e) as being anticipated by Jaeger (U.S. Patent No. 5,977,955).

Jaeger (U.S. Patent No. 5,977,955) depicts in Fig. 36 and 37 an input device for touch screen having a slidable cap 246 of a fader 247. The track 248 contains a pair of rotatable pulleys 254 and 256 which are situated at opposites ends of the track and which have axes of rotation that extend at right angles to the screen 249. A flexible belt 257 is engaged on the pulleys 245 and 246 and is fastened to the cap stem base portion 253 at one side of the base portion. Belt 257 passes freely through a passage 258 at the other side of the base portion 253.

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Thus the belt 257 turns pulleys 254 and 256 when cap 246 is slid from one location along track 248 to another and the amount and rate of pulley rotation is proportional the distance and speed of the travel of the cap (see column 22, lines 7-17). An encoder drive cable 313 has opposite ends fastened to the base portion 298 of key cap stem 297 as shown in Fig. 45 (see column 24, lines 4-6). In another embodiment, the outer surface of belt 282 has markings, such as bar codes 284, that enable an optical reader or bar code scanner 286 to track movement of the belt 282 as the code markings travel past a small window 287 in the floor of track 273, the scanner being behind the display screen 274 (Fig. 39 and 40) (see column 23, lines 9-13). The markings can be arranged in radial teeth. Jaeger (U.S. Patent No. 5,977,955) also teaches the embodiment of Figs. 42 to 45 is particularly suited for use in a motorized or automated fader system of the known kind in which initially manual motions of the fader key 299 are tracked and encoded into analog or digital signals which are stored to enable automatic repetition of the movements by drive motor means (see column 24, lines 18-23). The pulleys, belt and encoder cable are secured in a housing underneath the display screen as can be seen from Fig. 40.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claims 3-15, and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 6,326,956).

Referring to claims 3 and 4, it would have been obvious to one of ordinary skills in the art to form the fader cap from flexible or lubricious material in order to enhance the sliding motion and make it last longer.

In regard to claim 5, Jaeger et al. (U.S. Patent No. 6,326,956) disclose an input device for touch screen comprising a base member sliding along a linear path. As shown Fig. 7, the control panel 72 is provided with another control device 77, which is of the linear potentiometer or fader type.

As for claims 7-9, 12, and 13, Jaeger et al. (U.S. Patent No. 6,326,956) teach a flexible wiper contact 88 (which acts as a stylus tip), two electrically conductive metal rails 81 used as a power supply means to the fader cap (see column 12, lines 35-48). A photosensor 32 is situated within cap 78 at a location which is between rails 81 and views an underlying small area 84 of the display screen through a passage 86 in the cap which contains a light focusing lens 33. The location sensing signal produced by the photosensor 32 has a magnitude, which progressively changes as cap 78 is moved from setting to setting along the tracks 81 and may be used to vary the control signal which is produced by the control device.

In regard to claims 6, 14, 15 Jaeger et al. (U.S. Patent No. 6,326,956) teach a control device of this type the operator selectively varies a control signal by sliding a fader cap 78 along a linear path of travel (see column 12, lines 20-25). This fader cap is attached to the base of the touch screen. As can be seen from Fig. 22, the fader cap is constructed with a pair of flanges adapted to secure the fader cap to slide freely.

Referring to claims 10, 11, and 92, although Jaeger et al. (U.S. Patent No. 6,326,956) do not teach about using a battery or a photovoltaic cell, it would have been obvious to one of ordinary skills in the art to add a battery or a photovoltaic cell to supply power to the control circuit.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 5,982,355)

Although Jaeger et al. (U.S. Patent No. 5,982,355) do not teach about using a battery or a photovoltaic cell, it would have been obvious to one of ordinary skills in the art to add a photovoltaic cell to supply power to the control circuit.

13. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 5,982,355) in view of Chan et al. (U.S. Patent No. 6,057,830)

Although Jaeger et al. (U.S. Patent No. 5,982,355) did not teach the software means for mouse controller emulation, it would have been obvious to one of ordinary skill in the art to add mouse emulation software into touch screen as described in U.S. Patent No. 6,057,830 in order to control the touch screen both by touch with finger and using mouse.

14. Claims 47, 48, 50, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 5,982,355) in view of Milam (U.S. Patent No. 5,794,145)

Jaeger et al. (U.S. Patent No. 5,982,355) teach all the limitations of claims 47, 48, 50, 51 as applied to claims 45, 46 above except for means for generating detecting simultaneous operation includes multiple discrete band RF touch position means which corresponds to discrete frequency respectively.

However, Milam teach an input device of different types including touch sensitive display capable of processing and storing information received and transmitted by the radio frequency section. As shown in Fig. 3, the antenna 68 is coupled to the front end of the RF section 80 via a coaxial connector 98 or the like. In particular, the antenna 68 is coupled to a filter array 100 included within the RF section 80 which serves to separate the signals received and transmitted by the antenna 68 into discrete frequency bands. These frequency bands correspond to the operating frequency bands of the respective radios included in the mobile terminal 66 (see column 7, lines 39-48 of Milam).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the multiple discrete band RF method taught by Milam as RF detecting controllers disposed about the touch screen, and combine with the input device to touch screen taught by Jaeger et al. (U.S. Patent No. 5,982,355) so that mobile devices having multiple radios can avoid problems associated with mutual coupling between different antennas and other problems associated with cross-polarization without substantially adding to the cost or complexity of the device (see column 3, lines 10-20).

15. Claims 49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 5,982,355) in view of Milam (U.S. Patent No. 5,794,145) and further in view of Holehan (U.S. Patent No. 6,337,918).

Jaeger et al. (U.S. Patent No. 5,982,355) and Milam teach all the limitations of claims 49 and 52 as applied to claim 47 above except for means for detecting simultaneous operation includes multiple discrete wavelength IR.

However, Holehan teach touchpad controller 56 also produces signals to the infrared sources 20 to cause them to emit a pattern of infrared light which may be reflected off any object on the detector 16. When the user positions his or her finger on the glass 22, the reflected infrared light is processed by the CCD detector 24. Based on the reflected energy, the position of the user's finger can be triangulated. In this regard it may be desirable, in some instances, to have each of the sources 20 emit a slightly different wavelength or frequency of light so that the energy which is emitted from each of the sources 20 and reflected back from an object on the glass 22 can be separately identified to aid in triangulating the position of the object (see column 4, lines 54-68 and column 5, lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of different IR wavelengths taught by Holehan as IR controllers disposed about the touch screen, and combine with the input device to touch screen taught by Jaeger et al. (U.S. Patent No. 5,982,355) in order to enhance data and hardware security (see column 2, lines 5-10).

16. Claims 60-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 5,982,355) in view of Leung (U.S. Patent No. 6,388,655).

Jaeger et al. (U.S. Patent No. 5,982,355) teach all the limitations of claims 60-65 as applied to claim 20 above, except for different types of the top surface and the base of the controlling rod.

However, Leung discloses a touch control input device comprising a joystick the upper surface of which has a mushroom shape supported by a narrow stem as can be seen from Fig. 15. The top surface of the joystick can be snap fitted into the rod 162 through the hollow columnar

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156. It can be clearly seen from Fig. 15 that the top surface of the joystick is wider than the base. Also, the top surface of the joystick can be planar as shown in Fig. 11. Also, the top surface of the joystick can be formed of a cushion layer.

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the shape of the joystick taught by Leung with the joystick taught by Jaeger et al. (U.S. Patent No. 5,982,355) in order for the touch control to respond ergonomically, that is, in a manner more like a human limb responds (see column 3, lines 2-4).

17. Claims 69-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger et al. (U.S. Patent No. 5,982,355) in view of Zimmerman et al. (U.S. Patent No. 6,184,865).

Jaeger et al. (U.S. Patent No. 5,982,355) teach all the limitations of claims 69-71 as applied to claims 67 and 68 above, except for the elastic, resilient membrane extending radially from the control rod to the base member.

However, Zimmerman et al. disclose a joystick for point tracking having a flexible, elastic membrane 32 extending from the control shaft 24 means for biasing includes a flexing member, for biasing the conductive cone 22 to a quiescent position (column 4, lines 38-42) as shown in Fig. 8A. Therefore, it would have been obvious to one of ordinary skill in the art to add one or two elastic membrane from the control rod taught by Zimmerman et al. into the joystick taught by Jaeger et al. (U.S. Patent No. 5,982,355) in order to restore force, distribute the stress and keep the stress well within the elastic limit of the material, and to contribute to the sensitivity and maximum force that can be measured (see column 10, lines 41-46).

18. Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Ketwich (U.S. Patent No. 6,072,475).

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van Ketwich teach the flexible touch screen can be made in different shapes including the U-shape, the ball-shape or the dent-shape, it would be possible to curve it into a closed loop as claimed in order to emulate it using a knob.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

Chan et al. (U.S. Patent No. 6,057,830) disclose a touch-pad mouse controller.

Anderson (U.S. Patent No. 5,355,148) teaches using photovoltaic sensing cell for touch screen.

Skog (U.S. Patent No. 6,219,035) discloses a knob type control and stylus tip.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 703-305-4104. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 703-305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

or faxed to:

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(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose
telephone number is (703) 306-0377.

H. Nguyen

05/17/2002



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600